Emission Calculation Fact Sheet

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PLASTIC PRODUCTION AND PRODUCTS MANUFACTURING

This document lists Source Classification Codes (SCC) and emission factors for plastic production and product manufacturing facilities. They are provided as an aid in calculating emissions. Emissions factors for rubber and fiberglass manufacturing facilities are not included in this fact sheet; however, they must also be calculated and reported.

It is not required that facilities use these factors to estimate their emissions. If a facility disagrees with any emission factor in this document, other emission factors or methods of estimating emissions may be used provided the emission factors or methods correctly characterize the processes and the resulting emissions at the facility. A facility doing so must submit calculations and documentation showing the source of the factors or method used and justification for their use. For example, stack test data and site specific emission calculations provide more accurate emission estimates than the use of general emission factors.

Control Factors

The listed emission factors are for uncontrolled emissions. If a facility has control equipment, such as a fabric filter or thermal oxidizer, the emissions can be multiplied by the control factor. Calculate the control factor by subtracting the percent control efficiency from 100 and then divide that number by 100. For example, if the control efficiency is 87%, the control factor would be (100 - 87)/100 = 0.13. Control efficiencies may be listed on the equipment or in the equipment documentation. Alternatively, equipment suppliers can provide control efficiency values.

Scientific Notation

The emission factors are expressed in scientific notation, which means that the decimal point has been moved. If the exponent is negative, move the decimal point to the left. If the exponent is positive, move the decimal point to the right. If the exponent is zero, the decimal point does not move. For example, if a number is expressed as 2.0E-1, move the decimal point one place to the left to get 0.20. If a number is expressed as 2.0E2, move the decimal point 2 places to the right to get 200. If a number is expressed as 2.0E0, the decimal point does not move – the number is 2.0.

PLASTIC PRODUCTION

SCC	DESCRIPTION	POLLUTANT	EMISSION FACTORS
3-01-018-01	Polyvinyl Chlorides and Copolymers	NOX PM10,FLTRBLE SOX VOC	2.0E2 LB/TON PRODUCT 2.3E1 LB/TON PRODUCT 2.5E-2 LB/TON PRODUCT 1.7E1 LB/TON PRODUCT
3-01-018-02	Polypropylene and Copolymers	NOX PM10,FLTRBLE VOC	1.31E2 LB/TON PRODUCT 2.0E0 LB/TON PRODUCT 7.0E-1 LB/TON PRODUCT
3-01-018-07	General: Polyethylene (High Density)	PM10,FLTRBLE	6.6E-1 LB/TON PRODUCT
3-01-018-09	Extruder	VOC	1.1E1 LB/TON POLYETHYLENE
3-01-018-10	Conveying	VOC	4.6E-1 LB/TON POLYETHYLENE
3-01-018-11	Storage	PM,FLTRBLE VOC	8.0E-1 LB/TON POLYETHYLENE 1.0E-2 LB/TON POLYETHYLENE
3-01-018-12	General: Polyethylene (Low Density)	PM10,FLTRBLE	6.6E-1 LB/TON POLYETHYLENE
3-01-018-14	Extruder	VOC	6.6E1 LB/TON POLYETHYLENE

PLASTIC PRODUCTION *(continued)*

SCC	DESCRIPTION	POLLUTANT	EMISSION FACTORS
3-01-018-17	General*	VOC	1.07E1 LB/TON POLYSTYR RES
3-01-018-19	Solvent Recovery	VOC	3.2E0 LB/TON POLYSTYR RES
3-01-018-21	Extruding / Pelletizing / Conveying / Storage	VOC	3.0E-1 LB/TON POLYSTYR RES
3-01-018-27	Polyamide Resins	NOX	1.0E0 LB/TON POLYAMID RES
3-01-018-32	Urea-Formaldehyde Resins	VOC	1.47E1 LB/TON UREA-FOR RES
3-01-018-42	Melamine Resins	VOC	5.0E1 LB/TON MELAMINE RES
3-01-018-47	Epoxy Resins	VOC	5.1E0 LB/TON EPOXY RESIN
3-01-018-49	Acrylonitrile-Butadiene-Styrene (ABS) Resin	VOC	6.0E1 LB/TON ABS RESIN
3-01-018-70	Reactor (Polyether Resins)	VOC	5.0E1 LB/TON POLYETHRRESN
3-01-018-80	Reactor (Polyurethane)	VOC	5.2E1 LB/TON POLYURETHANE
3-01-018-92	Separation Process	VOC	2.0E0 LB/TON PRODUCT

* This factor may be used to calculate total emissions from a polystyrene resin production plant.

PLASTIC PRODUCTS MANUFACTURING

SCC	DESCRIPTION	POLLUTANT	EMISSION FACTORS
3-08-010-01	Adhesives Production	VOC	1.25E1 LB/TON ADHESIVE
3-08-010-02	Extruder	PM,PRIMARY VOC	9.58E-2 LB/TON PLASTIC 7.06E-2 LB/TON PLASTIC
3-08-010-03	Film Production, Die (Flat/Circular)	PM,PRIMARY VOC	8.02E-2 LB/TON PLASTIC 2.84E-2 LB/TON PLASTIC
3-08-010-04	Sheet Production, Polymerizer	VOC	3.5E0 LB/TON PLASTIC
3-08-010-05	Foam Production, General Process	VOC	6.0E1 LB/TON PLASTIC
3-08-010-06	Lamination, Kettles/Oven	VOC	2.05E1 LB/TON PLASTIC
3-08-010-07	Molding Machine	PM,PRIMARY VOC	1.302E-1 LB/TON PLASTIC 6.14E-2 LB/TON PLASTIC

RUBBER MANUFACTURING AND PRODUCTS: MAERS does not have the capability to calculate emissions for these SCC codes. Check "Other" on the MAERS E-101 Form and use an alternate method for calculating emissions. Be sure to submit documentation to support any calculations. For assistance in calculating emissions, refer to EPA's Clearinghouse for Inventories and Emission Factors (CHIEF) Internet Site at **www.epa.gov/ttn/chief** or contact your industry trade group/organization.

FIBERGLASS RESIN PRODUCTS: MAERS does not have the capability to calculate emissions for these SCC codes. Check "Other" on the MAERS E-101 Form and use an alternate method for calculating emissions. Be sure to submit documentation to support any calculations. Unified Emission Factors are available from the American Composites Manufacturers Association (ACMA) web site **www.cfa-hq.org/ga/index.cfm**.

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